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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/721,441	11/24/2003	Alan M. Myers	42P16669	7136

7590 10/26/2005  
Blakely, Sokoloff, Taylor & Zafman LLP  
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EXAMINER

MULPURI, SAVITRI

ART UNIT PAPER NUMBER

2812

DATE MAILED: 10/26/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

EX

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/721,441	MYERS ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Savitri Mulpuri	2812	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 29 July 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) 17-30 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 11-16 is/are allowed.
- 6) ☒ Claim(s) 1-6 and 8-10 is/are rejected.
- 7) ☒ Claim(s) 7 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)               | Paper No(s)/Mail Date. _____  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>11/24/2003</u>  | 6) <input type="checkbox"/> Other: _____                                    |

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### DETAILED ACTION

This action is in response to the applicant's communication filed on 7/29/2005 electing claims 1-16.

#### ***Claim Rejections - 35 USC § 102***

#### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

Claims 1-4, 6, 8-10 are rejected under 35 U.S.C. 102(a) as being anticipated by Saenger et al (US 20030129798).

Saenger et al teaches a process comprising: Providing a substrate; etching at least a trench into a substrate, the at least one trench having a pair of walls and bottom; forming a first electrode "36" within the trench over the pair of walls and the bottom; and forming a second electrode "38" within the trench over pair of walls and the bottom, wherein the first electrode is parallel to the second electrode. Saenger further teach at least one trench has a width and the length and wherein the first electrode and the second electrode are approximately a 90 degree angle to the length and of the at least one trench. Saenger et al teach forming thin insulator layer nitride/oxide layer "35" (see fig. 5 B and para 0045, last three lines), before forming the first and second electrode "36, 38". With respect to claim 6 Saenger et al teaches patterning and etching the conductive

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layer "36, 38 (see fig 6 B and related description). With respect to claims 8-10 are Saenger et al teaches plurality of trenches and forming conductive layer '36, 38" with platinum and substrate is silicon die. Layers 36, 38 are broadly interpreted as first and second electrode because the claim language is not further limiting.

***Claim Rejections - 35 USC § 103***

Claims 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Saenger et al in combination with Chou et al(US 5,933,748).

Saenger et al do not teach depositing polysilicon layer on the nitride layer and then oxidizing polysilicon layer to form nitride/oxide within the trench.

Chou et al teaches forming polysilicon layer and then oxidizing the polysilicon layer to form oxide layer "58"(see fig.19 and related description). It would have been obvious to one of ordinary skill in the art to form oxide on nitride by depositing polysilicon and then oxidizing the polysilicon layer to form composite nitride/oxide because Chou et al teaches polysilicon oxide is more durable than CVD oxide(see last four lines in abstract).

Claim 7 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 10-16 are allowed.

***Allowable Subject Matter***

The following is a statement of reasons for the indication of allowable subject matter: Prior art neither teach nor suggest using sacrificial light absorbing layer (SLAM) for patterning resist and conductive layer and the process for maximizing a flow rate of liquid in the trench by increasing an electric field created by the first electrode and the second electrode across the trench by minimizing the distance between the first electrode and the second electrode.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Prior art teach trench formation and electro osmotic pump formation for ICs.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Savitri Mulpuri whose telephone number is 571-272-1677. The examiner can normally be reached on Mon-Fri from 8 a.m. to 4.30 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Lebentritt, can be reached on 571-272-1873. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair->

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direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read 'S. Mulpuri', is positioned above the printed name.

Savitri Mulpuri  
Primary Examiner  
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